

FIG. 1

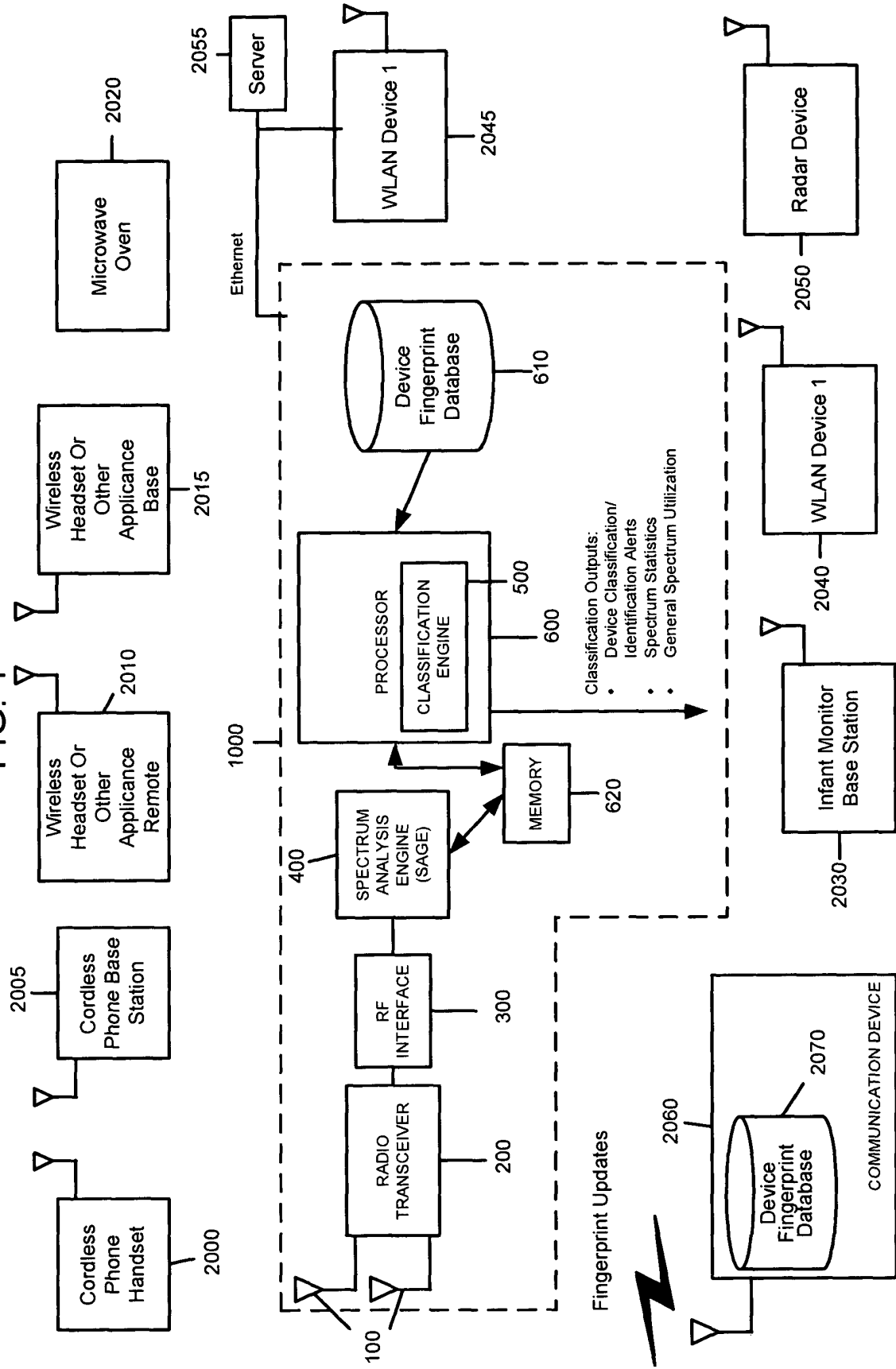


FIG. 2

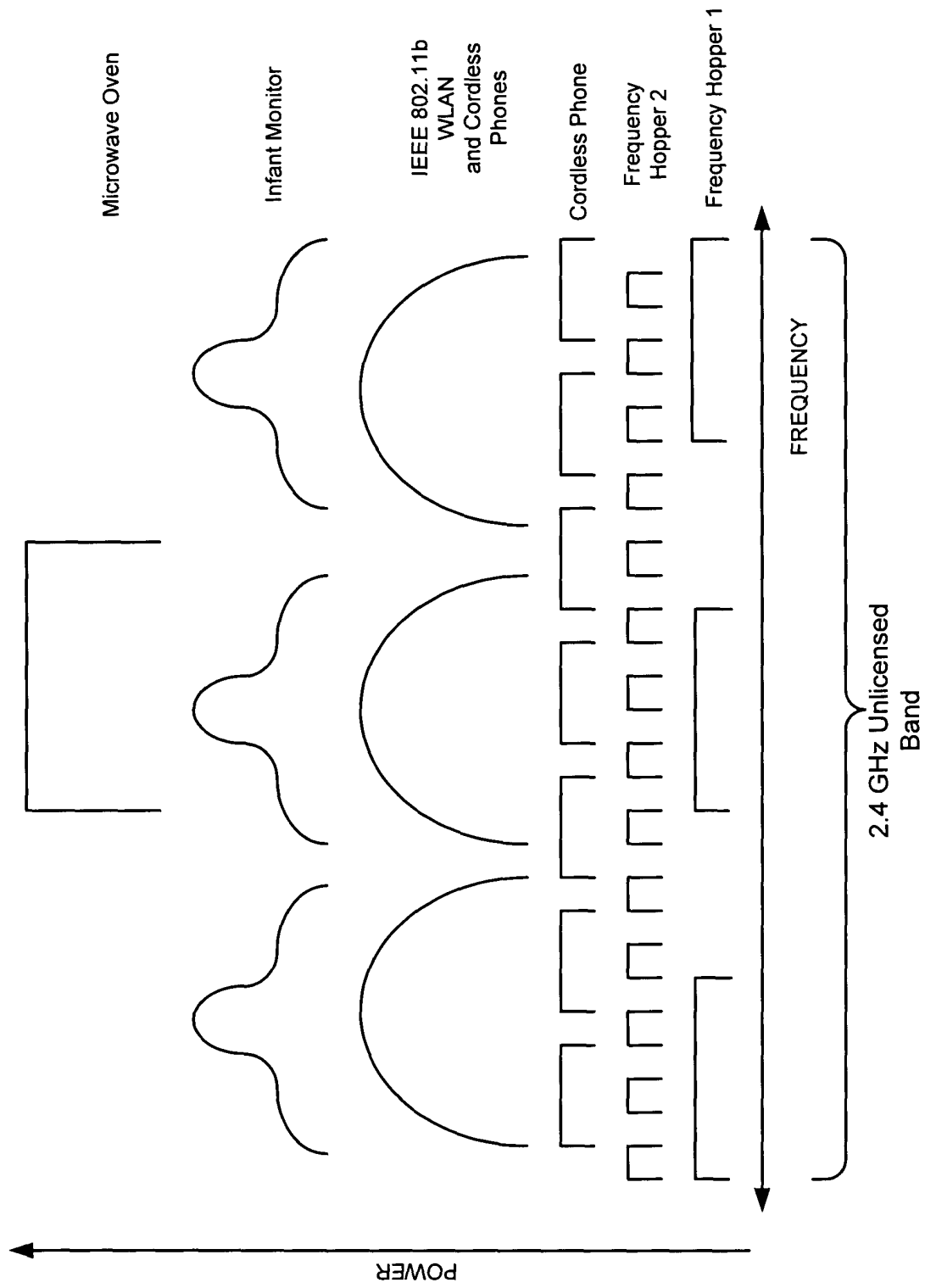
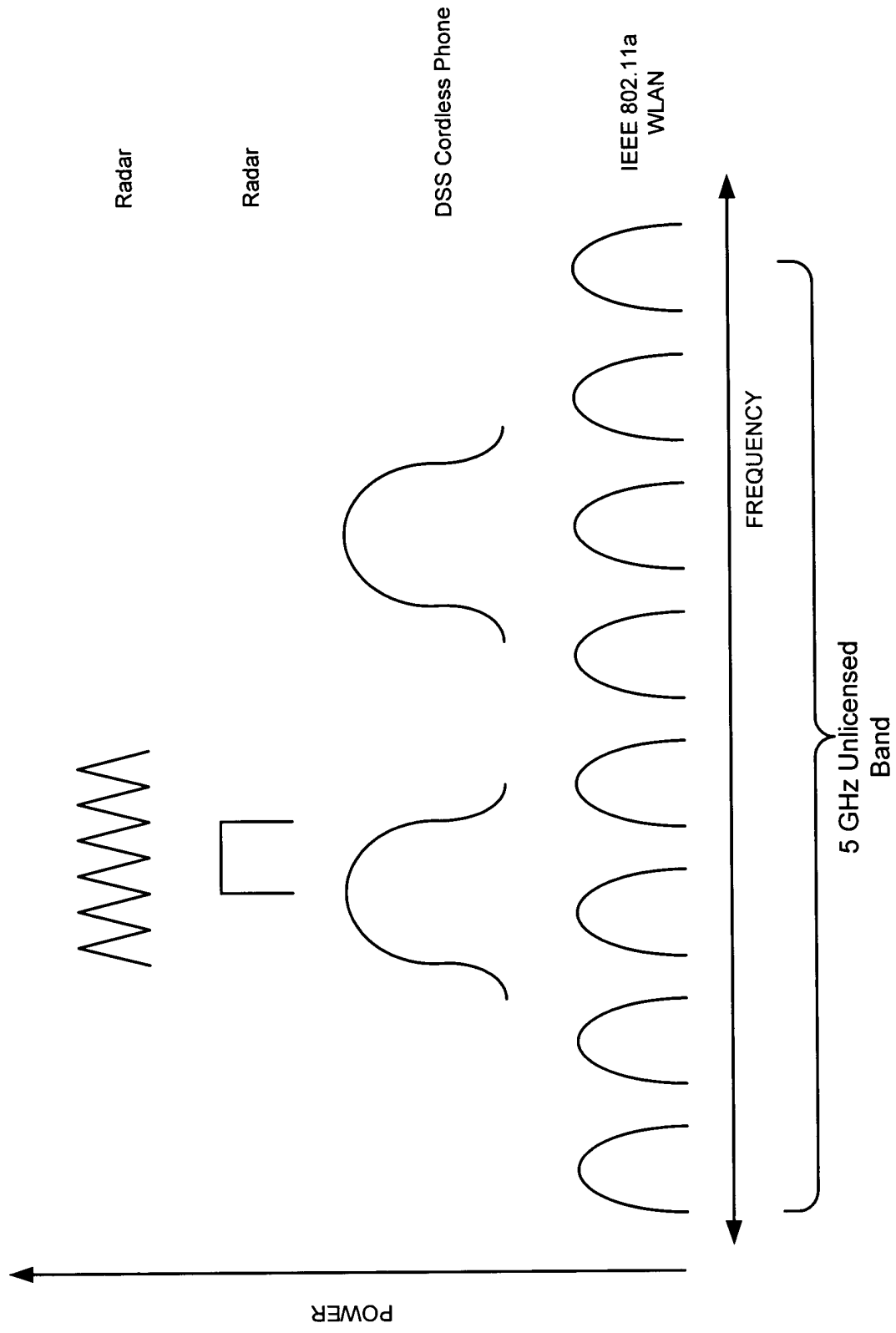
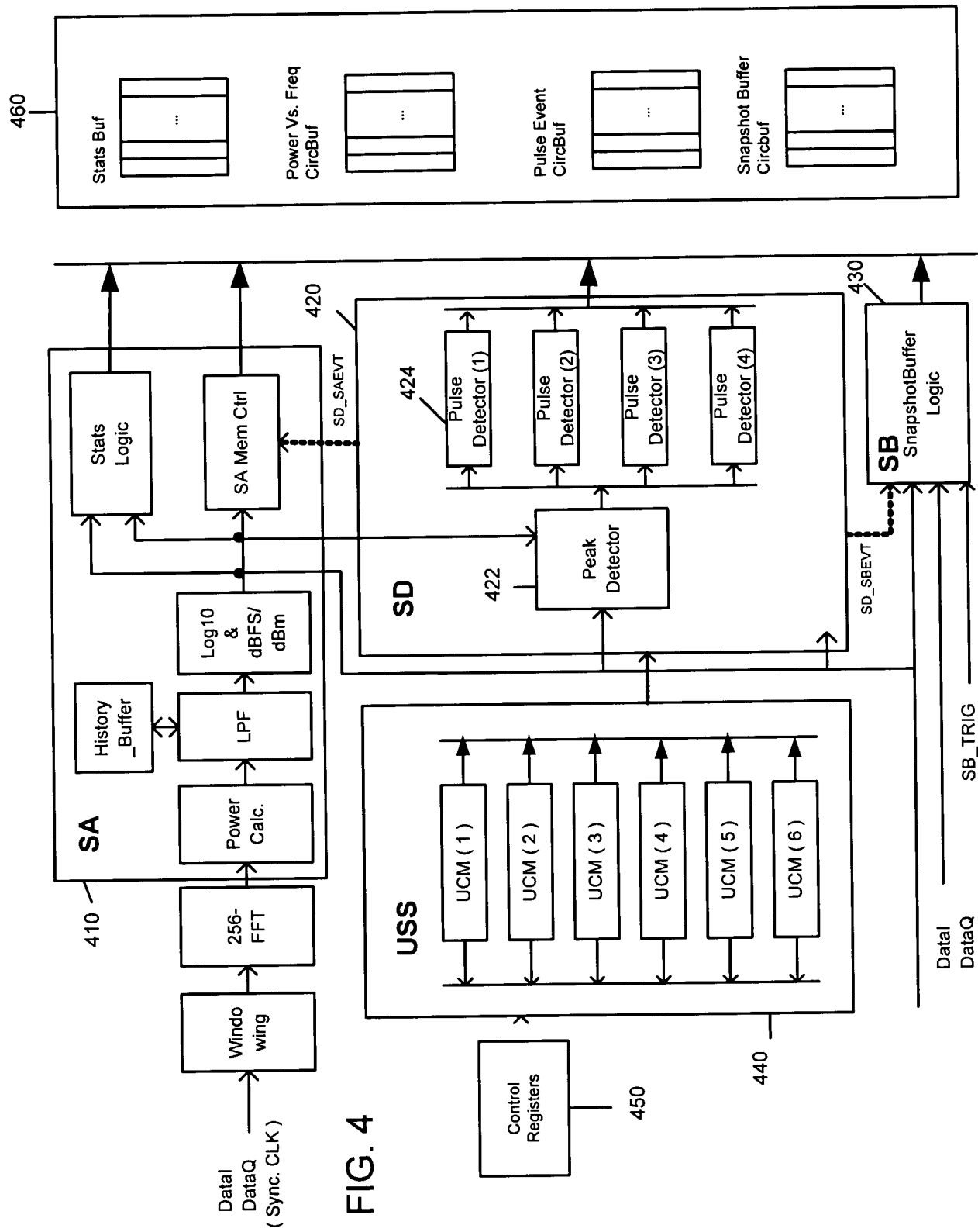


FIG. 3





**FIG. 4**

FIG. 5

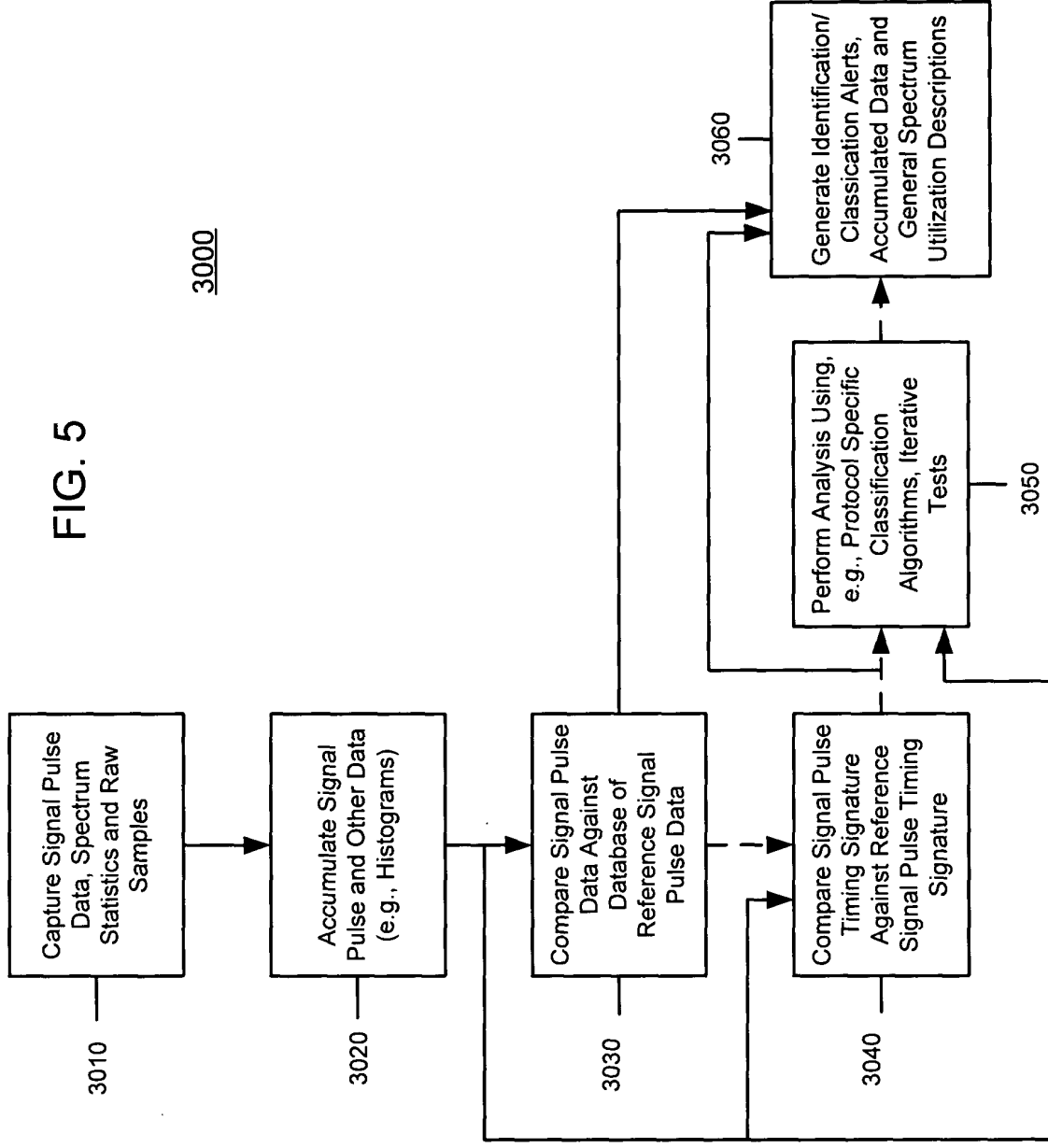
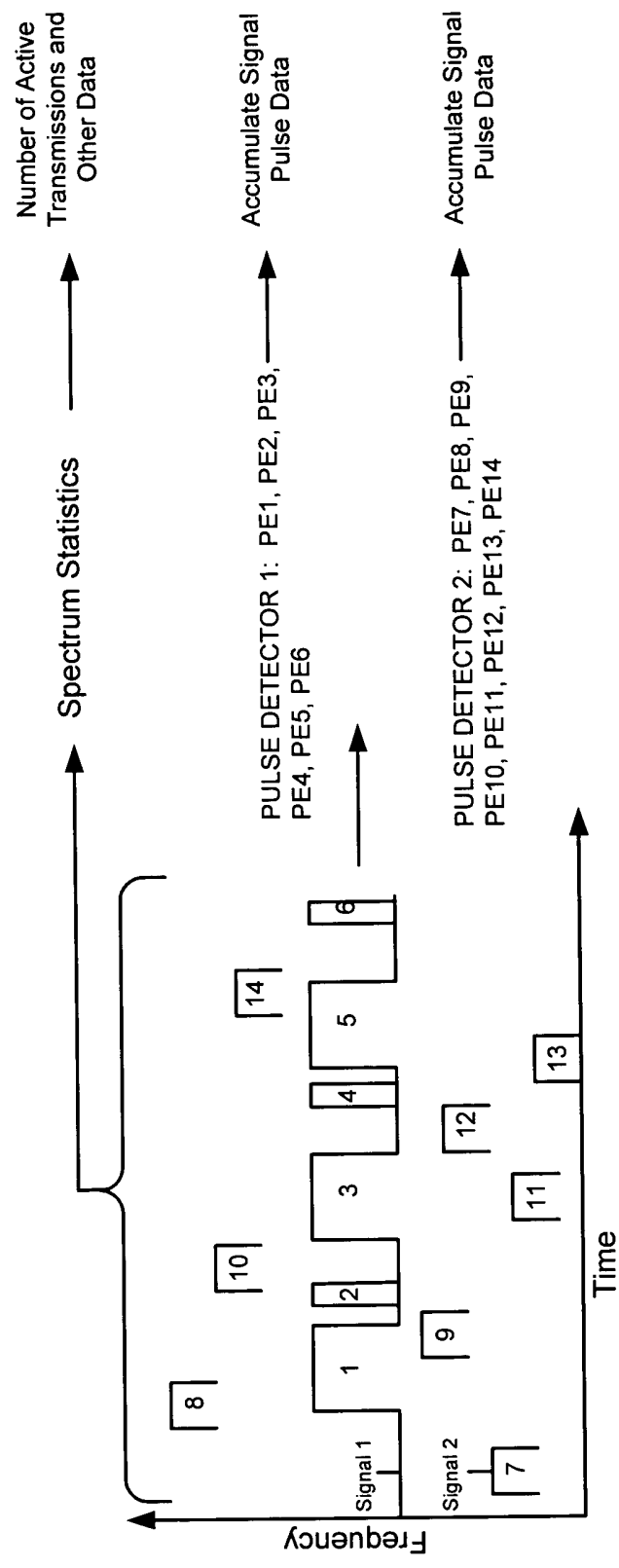
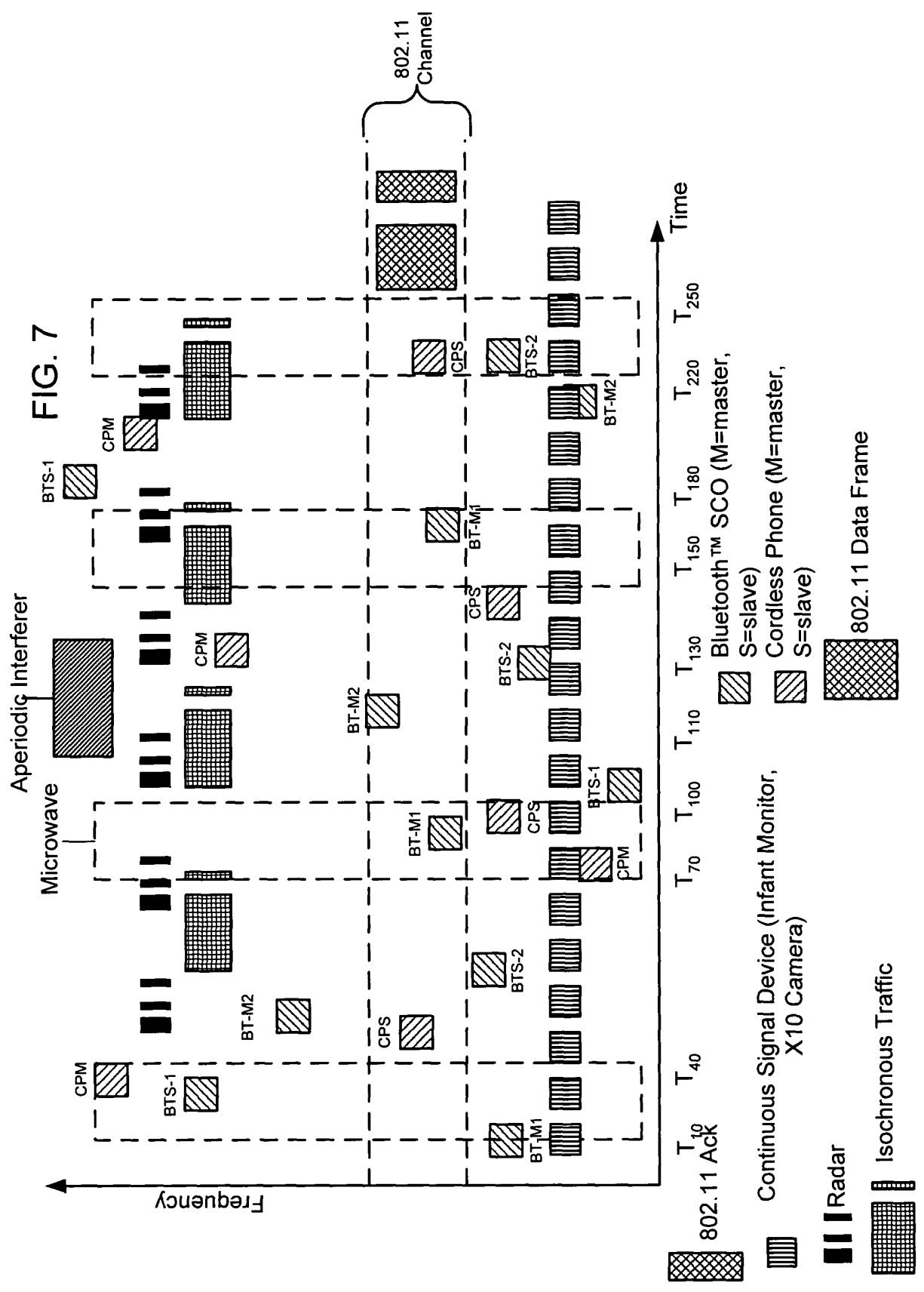


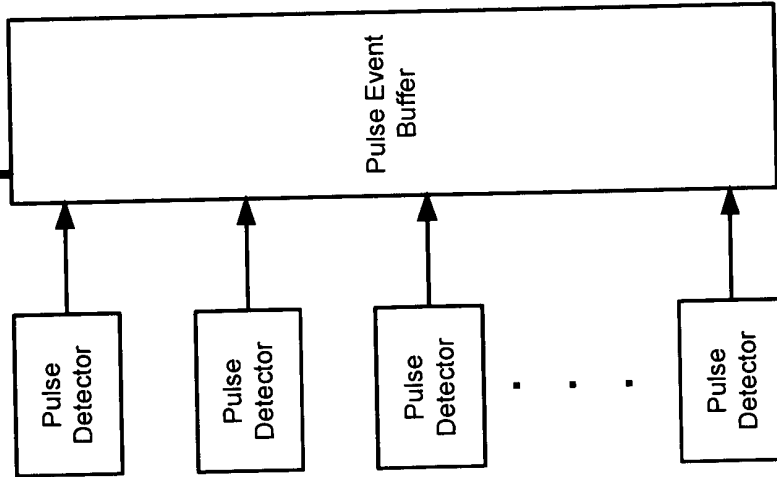
FIG. 6





New Pulse Events

FIG. 8  
Pulse History Table in Memory



Pulse Start Time	Pulse Center Frequency	Pulse Duration	Pulse Bandwidth
0 $\mu$ s	2.450 GHz	7000 $\mu$ s	4000 kHz
0 $\mu$ s	2.300 GHz	400 $\mu$ s	1000 kHz
0 $\mu$ s	2.600 GHz	700 $\mu$ s	1000 kHz
625 $\mu$ s	2.500 GHz	400 $\mu$ s	1000 kHz
3750 $\mu$ s	2.700 GHz	400 $\mu$ s	1000 kHz
4375 $\mu$ s	2.200 GHz	400 $\mu$ s	1000 kHz
5000 $\mu$ s	2.400 GHz	700 $\mu$ s	1000 kHz
7500 $\mu$ s	2.400 GHz	400 $\mu$ s	1000 kHz
8125 $\mu$ s	2.750 GHz	400 $\mu$ s	1000 kHz
10000 $\mu$ s	2.700 GHz	700 $\mu$ s	1000 kHz
11250 $\mu$ s	2.250 GHz	400 $\mu$ s	1000 kHz
11875 $\mu$ s	2.450 GHz	400 $\mu$ s	1000 kHz
15000 $\mu$ s	2.650 GHz	400 $\mu$ s	1000 kHz
15000 $\mu$ s	2.100 GHz	700 $\mu$ s	1000 kHz
15625 $\mu$ s	2.380 GHz	400 $\mu$ s	1000 kHz
16000 $\mu$ s	2.450 GHz	7000 $\mu$ s	4000 kHz

Classifiers/  
Templates  
access  
SAGE Data  
Sequentially

- Classifier 1 (e.g., microwave oven)
- Classifier 2 (e.g., cordless phone type 1)
- Classifier 3 (e.g., Bluetooth™ SCO)
- Classifier 4 (e.g., 802.11)
- Classifier 5 (e.g., infant monitor)
- Classifier (e.g., video camera or other continuous emitter)
- Classifier N

SA Stats Data

Power Vs. Frequency  
Data

Snapshot Data

Old Pulse Events



FIG. 9

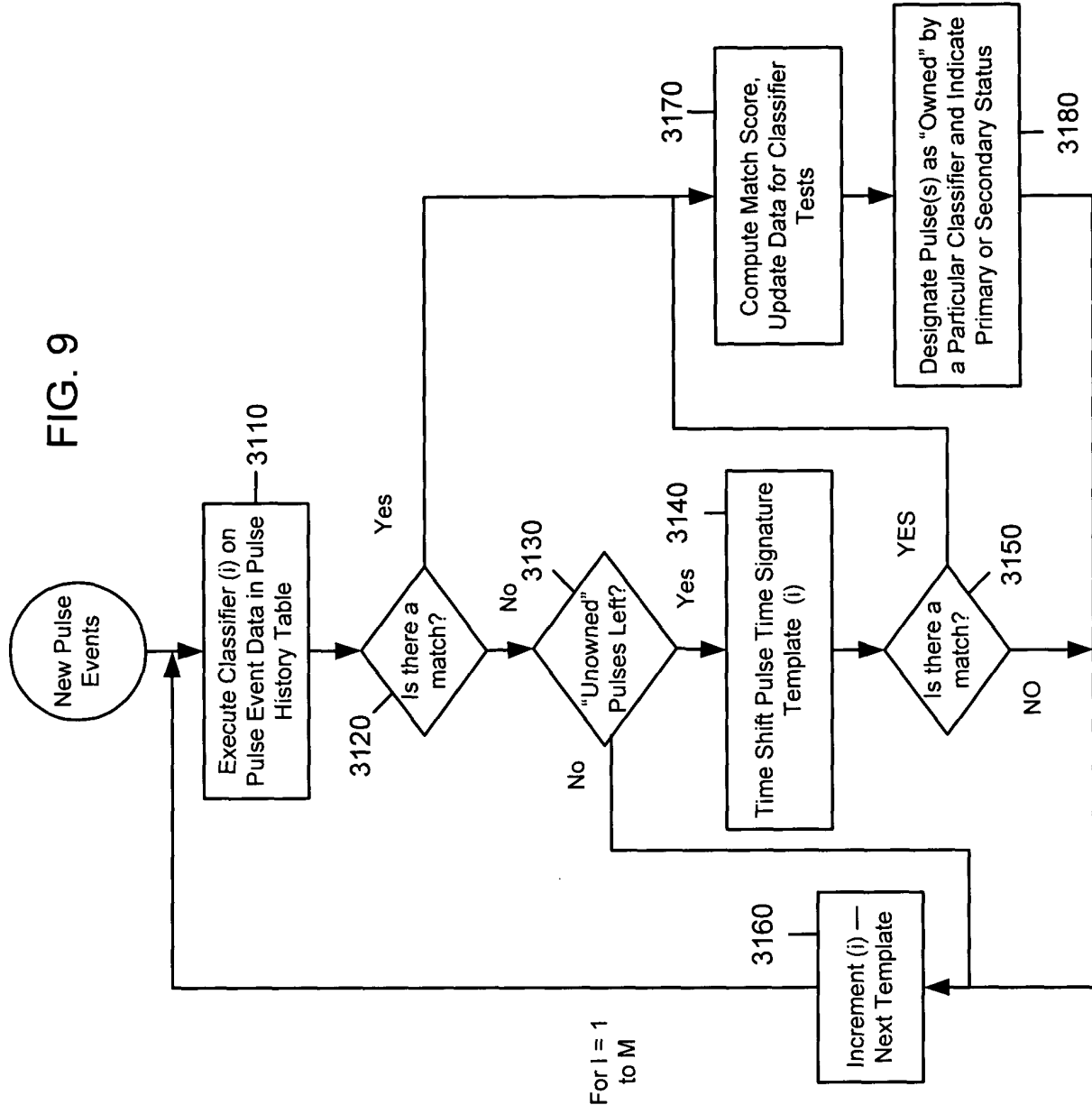


FIG. 10

Pulse Start Time	Pulse Center Frequency	Pulse Duration	Pulse Bandwidth	Classification/Identification
0 $\mu$ s	2.450 GHz	7000 $\mu$ s	4000 kHz	
0 $\mu$ s	2.300 GHz	400 $\mu$ s	1000 kHz	
0 $\mu$ s	2.600 GHz	700 $\mu$ s	1000 kHz	
625 $\mu$ s	2.500 GHz	400 $\mu$ s	1000 kHz	Possible Bluetooth™ SCO pulse related to 400 $\mu$ s pulse at time 0 $\mu$ s
3750 $\mu$ s	2.700 GHz	400 $\mu$ s	1000 kHz	Possible Bluetooth™ SCO pulse related to 400 $\mu$ s pulse at time 0 $\mu$ s and time 625 $\mu$ s
4375 $\mu$ s	2.200 GHz	400 $\mu$ s	1000 kHz	Possible Bluetooth™ SCO pulse related to 400 $\mu$ s pulse at time 0 $\mu$ s, time 625 $\mu$ s and time 3750 $\mu$ s
5000 $\mu$ s	2.400 GHz	700 $\mu$ s	1000 kHz	Possible cordless phone pulse related to 700 $\mu$ s pulse at time 0 $\mu$ s
7500 $\mu$ s	2.400 GHz	400 $\mu$ s	1000 kHz	Possible Bluetooth™ SCO pulse related to 400 $\mu$ s pulse at time 0 $\mu$ s, time 625 $\mu$ s, time 3750 $\mu$ s and time 4375 $\mu$ s
8125 $\mu$ s	2.750 GHz	400 $\mu$ s	1000 kHz	Possible Bluetooth™ SCO pulse related to 400 $\mu$ s pulse at time 0 $\mu$ s, time 625 $\mu$ s, time 3750 $\mu$ s, time 4375 $\mu$ s and time 7500 $\mu$ s
10000 $\mu$ s	2.700 GHz	700 $\mu$ s	1000 kHz	Possible Cordless phone pulse related to 700 $\mu$ s pulse at time 0 $\mu$ s and at time 5000 $\mu$ s (Primary Owner: Classifier 2; Secondary Owner: Classifier Z)
11250 $\mu$ s	2.250 GHz	400 $\mu$ s	1000 kHz	Possible Bluetooth™ SCO pulse related to 400 $\mu$ s pulse at time 0 $\mu$ s, time 625 $\mu$ s, time 3750 $\mu$ s, time 4375 $\mu$ s, time 7500 $\mu$ s and time 8125 $\mu$ s
11875 $\mu$ s	2.450 GHz	400 $\mu$ s	1000 kHz	...
15000 $\mu$ s	2.650 GHz	400 $\mu$ s	1000 kHz	...
15000 $\mu$ s	2.100 GHz	700 $\mu$ s	1000 kHz	Possible Cordless phone pulse related to 700 $\mu$ s pulse at time 0 $\mu$ s, at time 5000 $\mu$ s and at time 1000 $\mu$ s (Primary Owner: Classifier 2; Secondary Owner: Classifier Z)
15625 $\mu$ s	2.380 GHz	400 $\mu$ s	1000 kHz	...
16000 $\mu$ s	2.450 GHz	7000 $\mu$ s	4000 kHz	Possible microwave oven pulse related to 7000 $\mu$ s pulse at time 0 $\mu$ s

FIG. 11

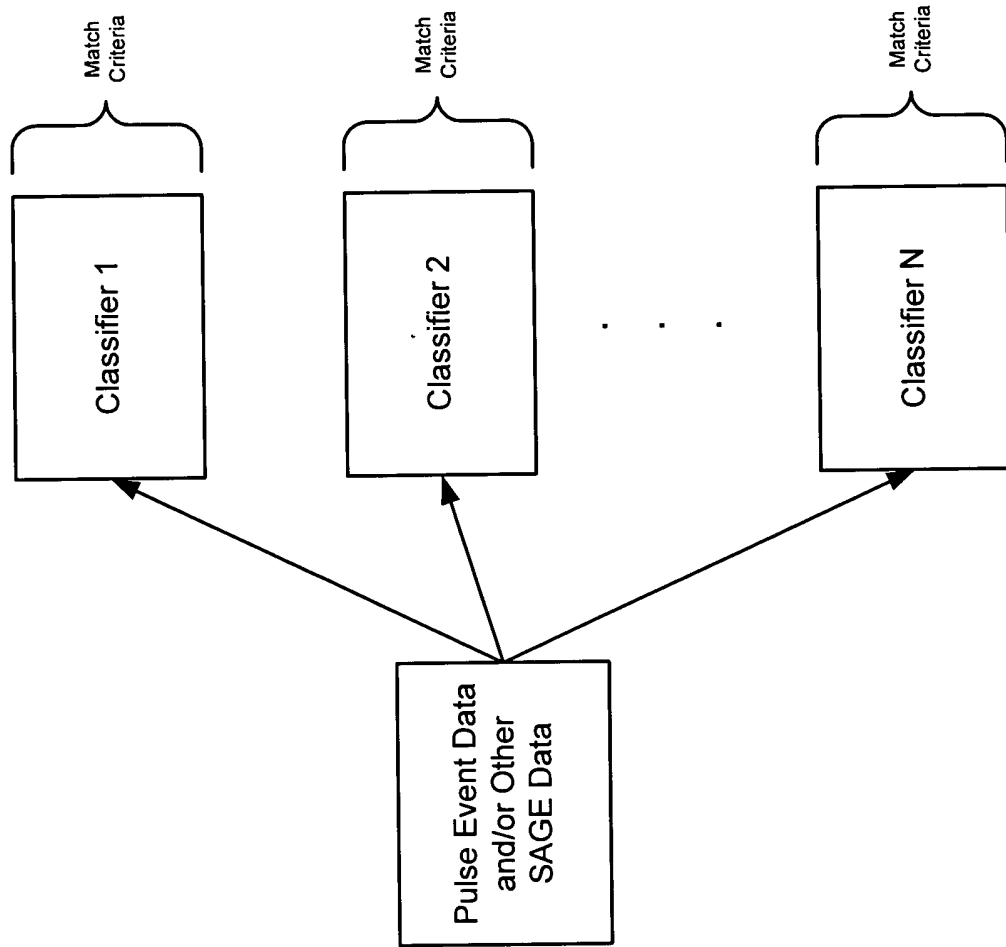
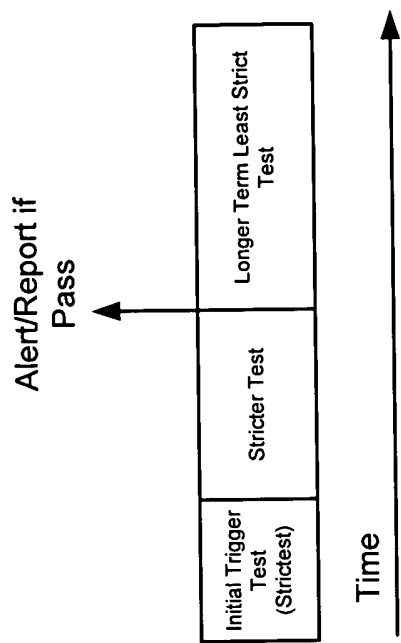


FIG. 12



**FIG. 13**

## Exemplary Signal Pulse Templates

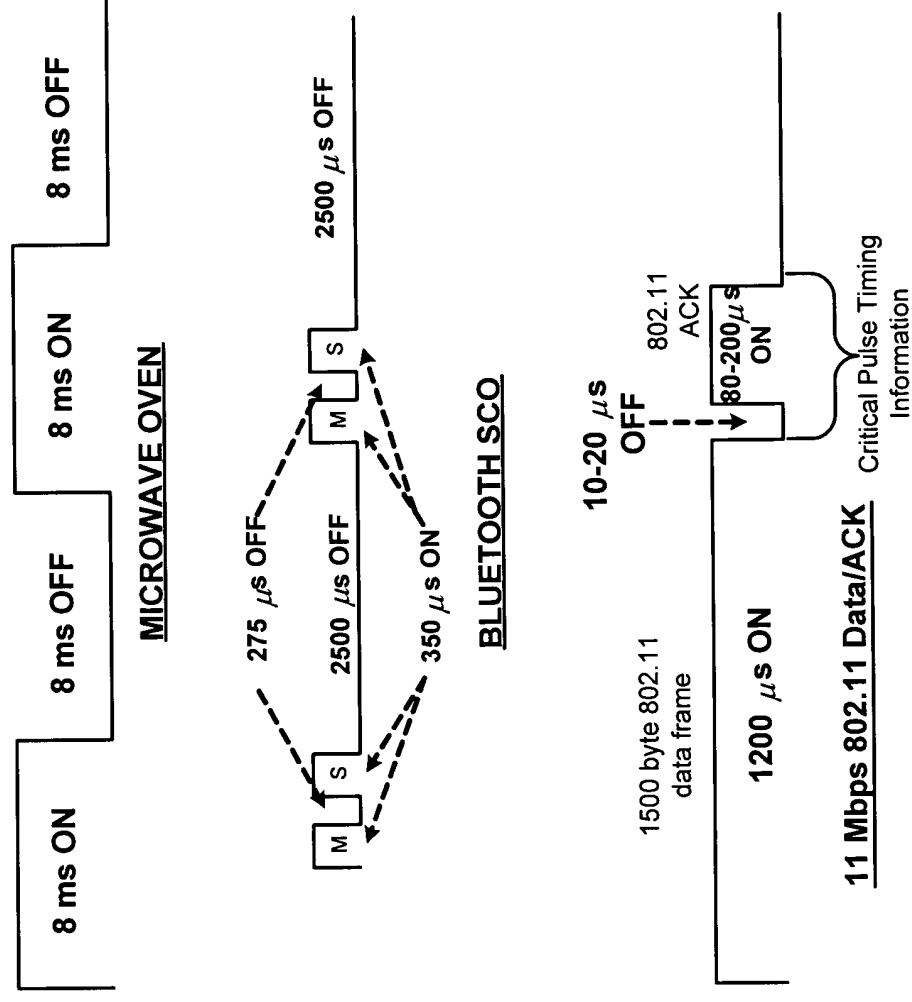


FIG. 14

Pulse History Table

Pulse Start Time	Pulse Center Frequency	Pulse Duration	Pulse Bandwidth
0 $\mu$ s	2.450 GHz	7000 $\mu$ s	4000 kHz
0 $\mu$ s	2.300 GHz	400 $\mu$ s	1000 kHz
0 $\mu$ s	2.600 GHz	700 $\mu$ s	1000 kHz
625 $\mu$ s	2.500 GHz	400 $\mu$ s	1000 kHz
3750 $\mu$ s	2.700 GHz	400 $\mu$ s	1000 kHz
4375 $\mu$ s	2.200 GHz	400 $\mu$ s	1000 kHz
5000 $\mu$ s	2.400 GHz	700 $\mu$ s	1000 kHz
7500 $\mu$ s	2.400 GHz	400 $\mu$ s	1000 kHz
8125 $\mu$ s	2.750 GHz	400 $\mu$ s	1000 kHz
10000 $\mu$ s	2.700 GHz	700 $\mu$ s	1000 kHz
11250 $\mu$ s	2.250 GHz	400 $\mu$ s	1000 kHz
11875 $\mu$ s	2.450 GHz	400 $\mu$ s	1000 kHz
15000 $\mu$ s	2.650 GHz	400 $\mu$ s	1000 kHz
15000 $\mu$ s	2.100 GHz	700 $\mu$ s	1000 kHz
15625 $\mu$ s	2.380 GHz	400 $\mu$ s	1000 kHz
16000 $\mu$ s	2.450 GHz	7000 $\mu$ s	4000 kHz

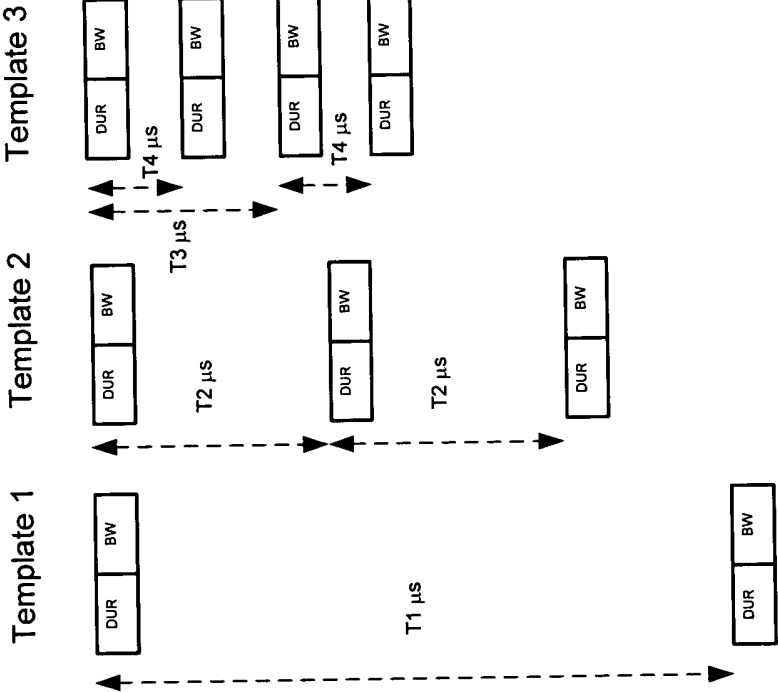
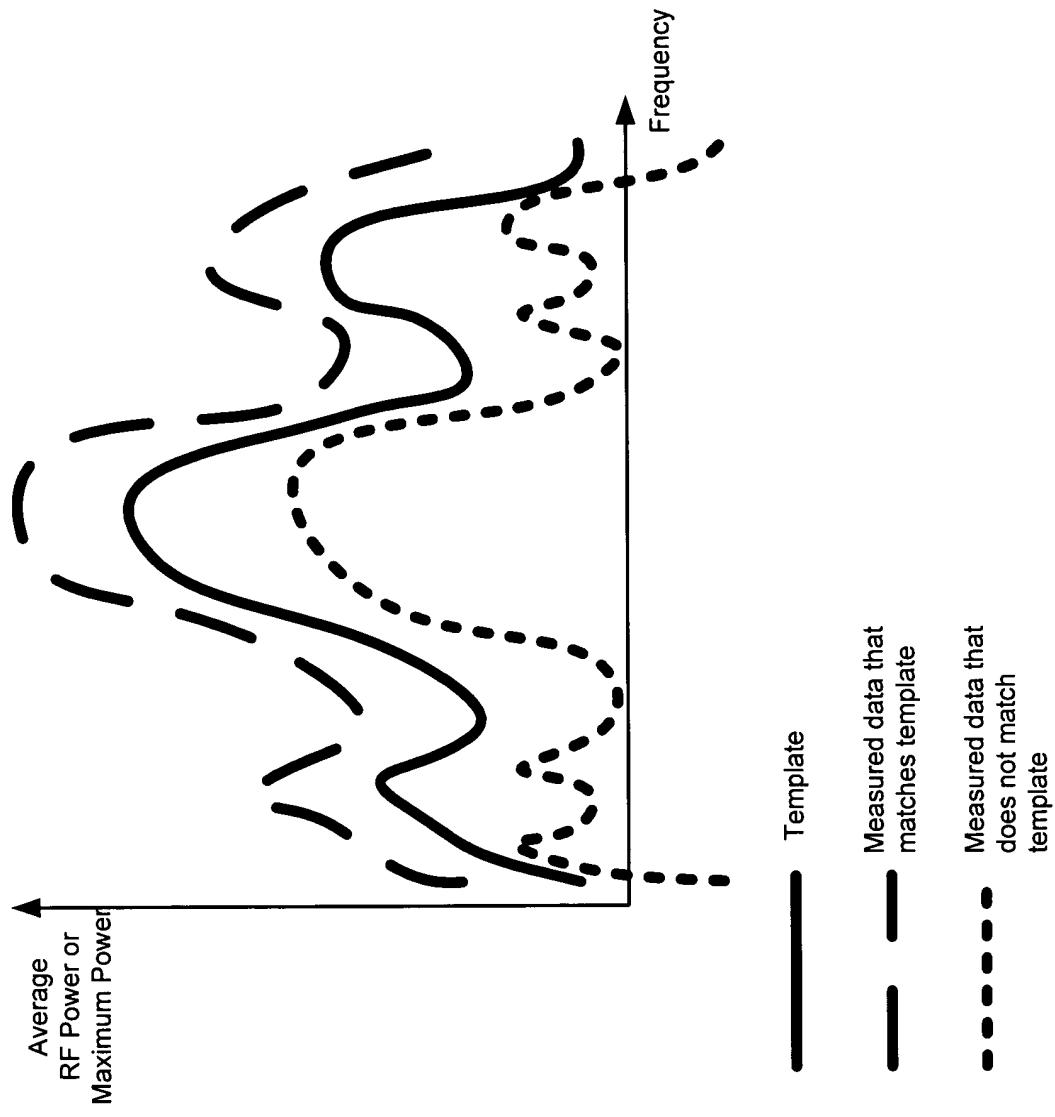


FIG. 15



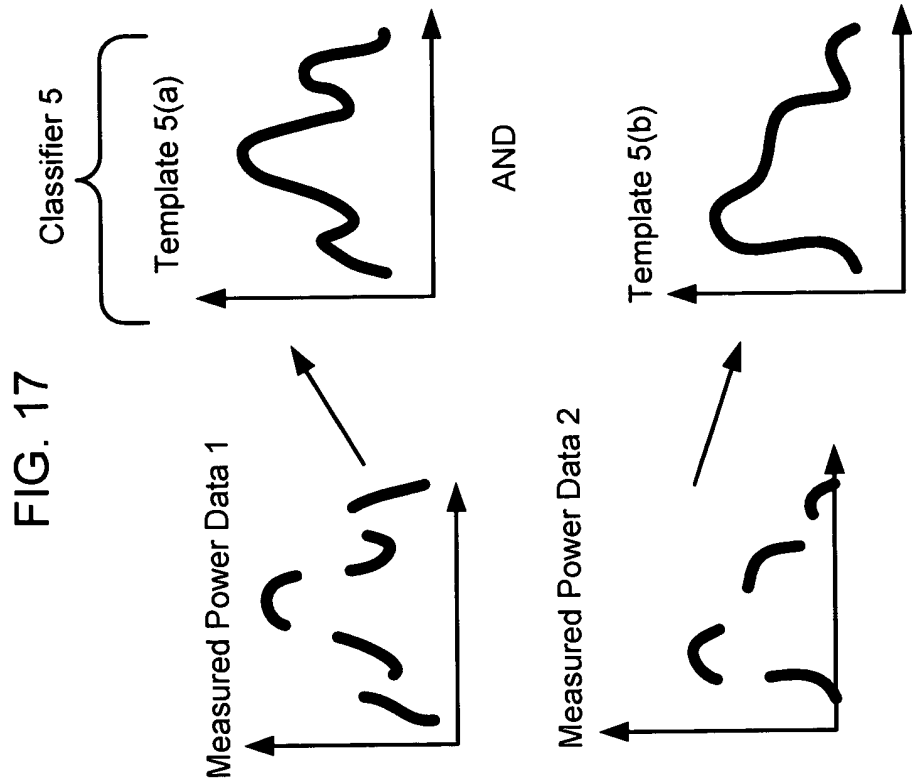
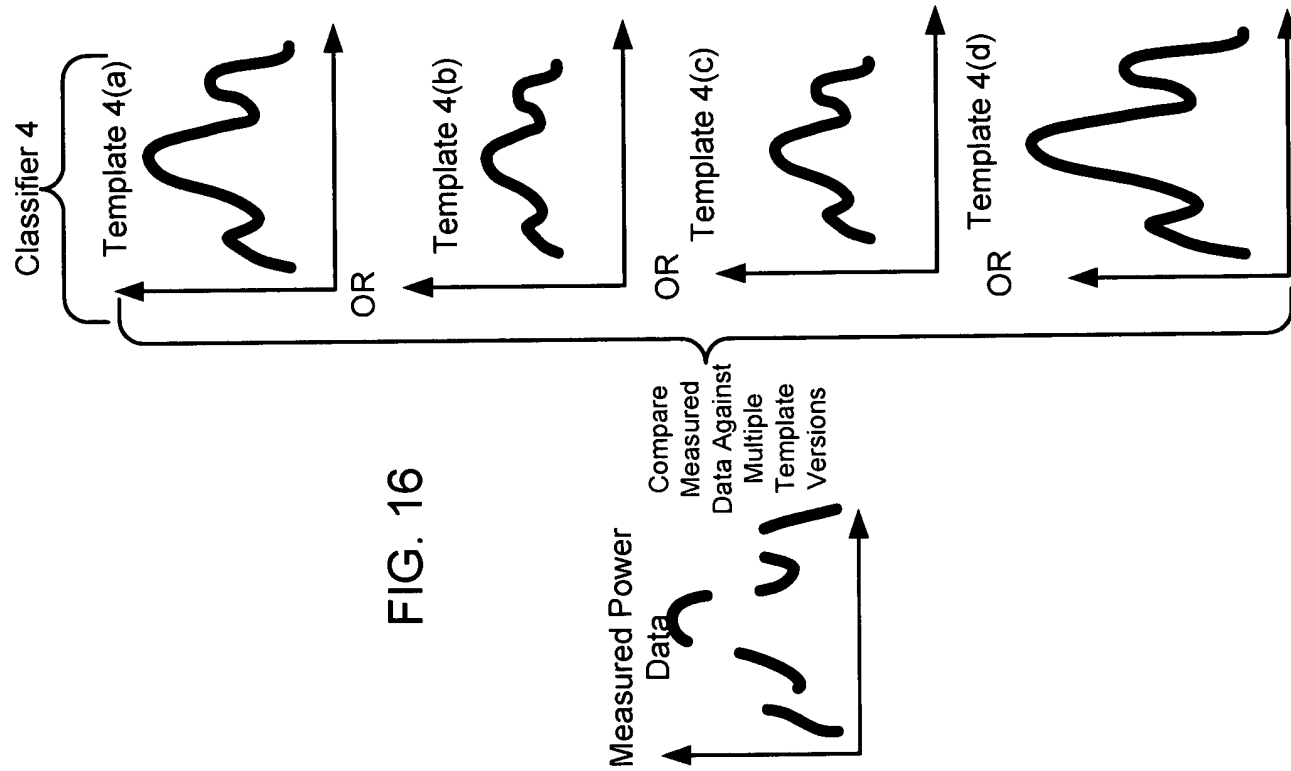


FIG. 18

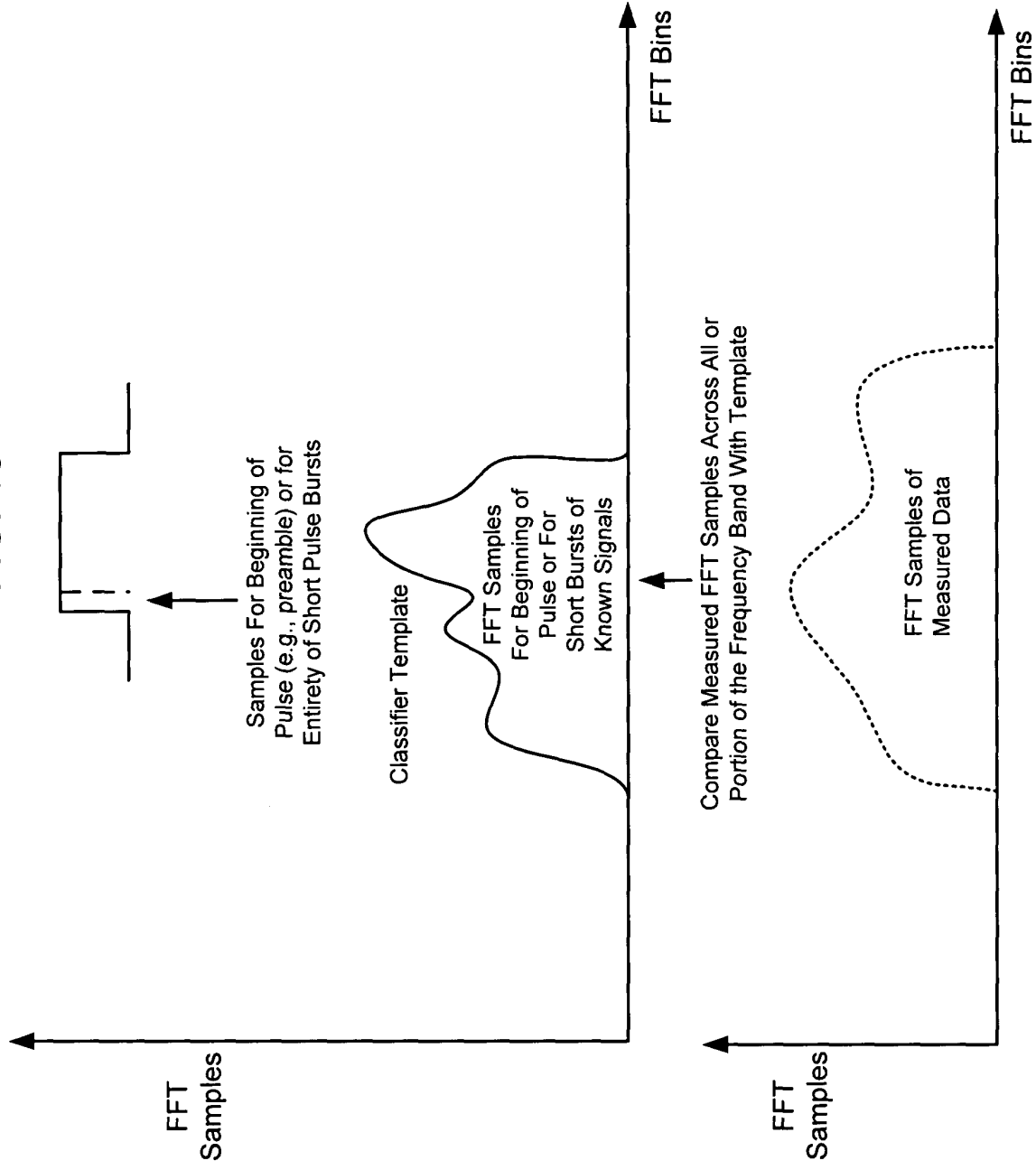




FIG. 19

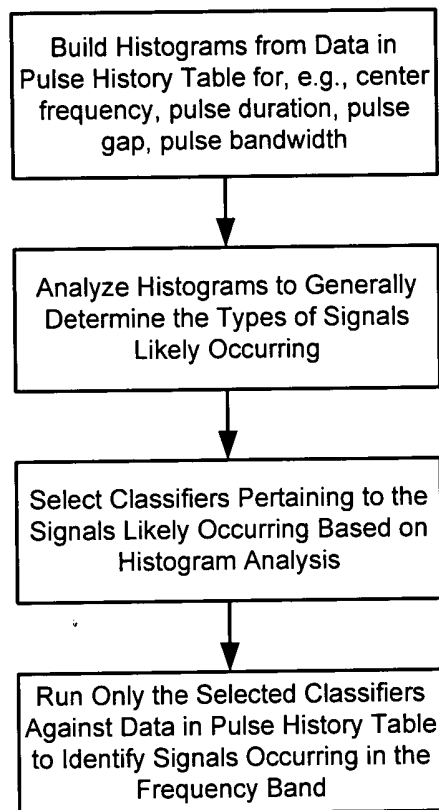
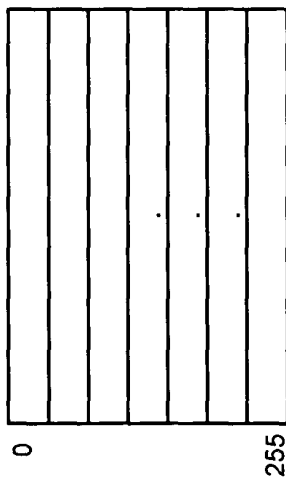
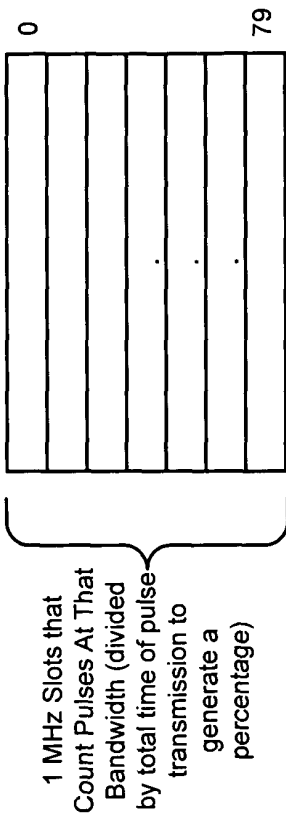


FIG. 20

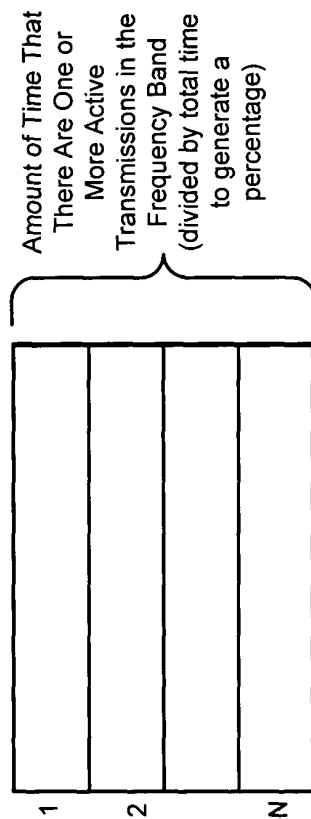
Center Frequency Histogram



Bandwidth Histogram



Active Transmissions Histogram



Pulse Duration/Time Between Pulses Histograms

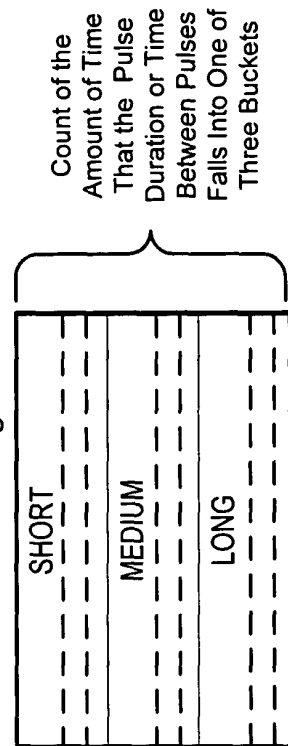


FIG. 21

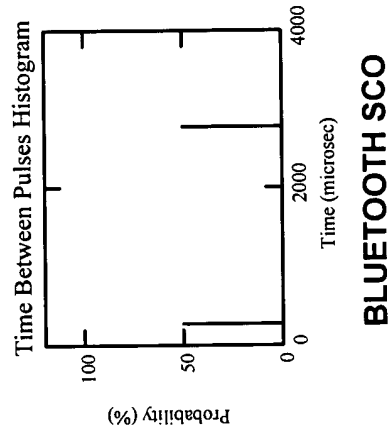
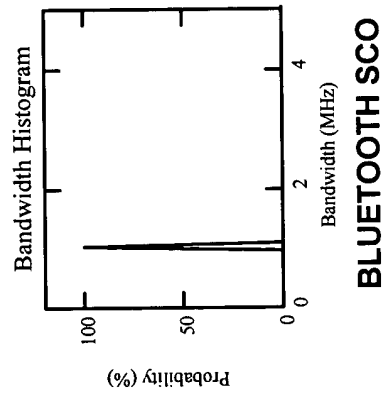
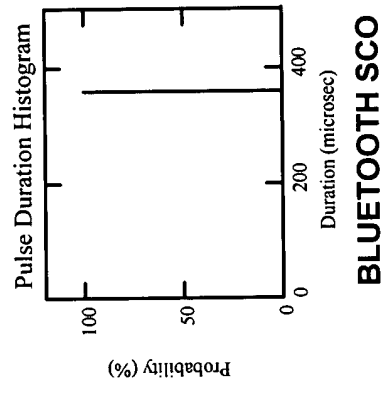
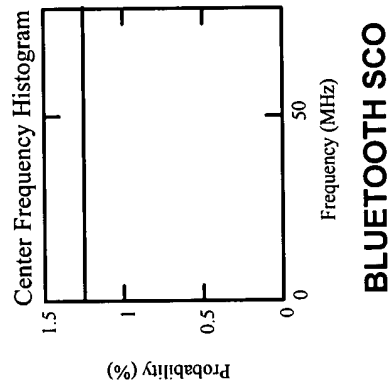


FIG. 22

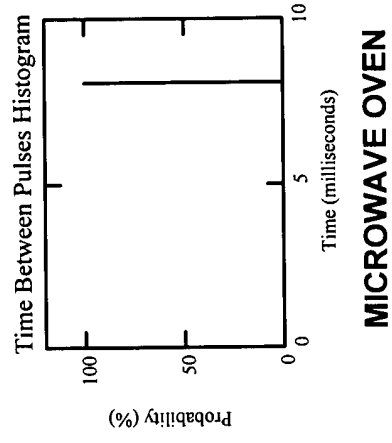
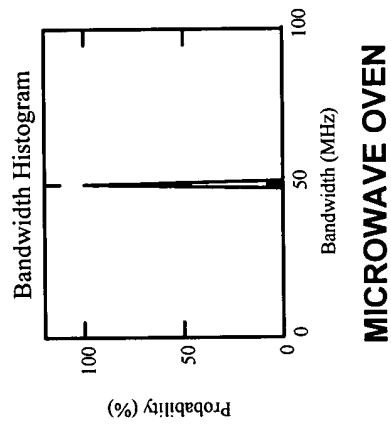
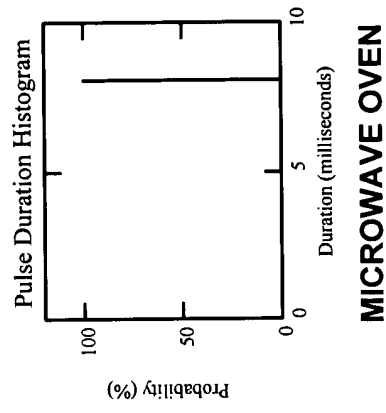
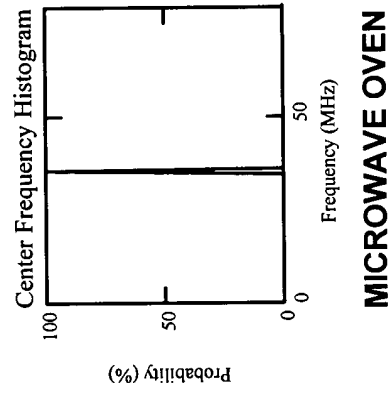


FIG. 23

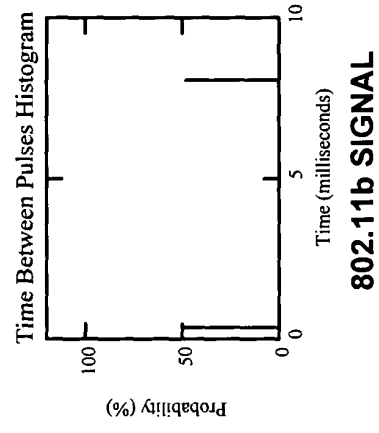
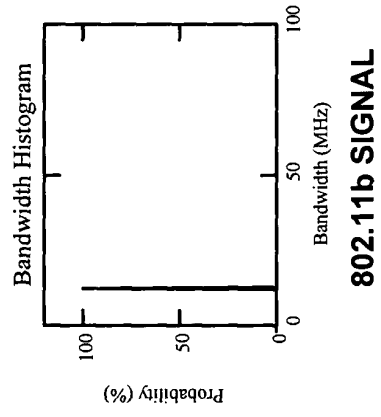
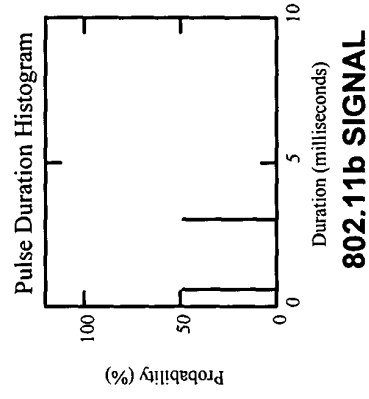


FIG. 24

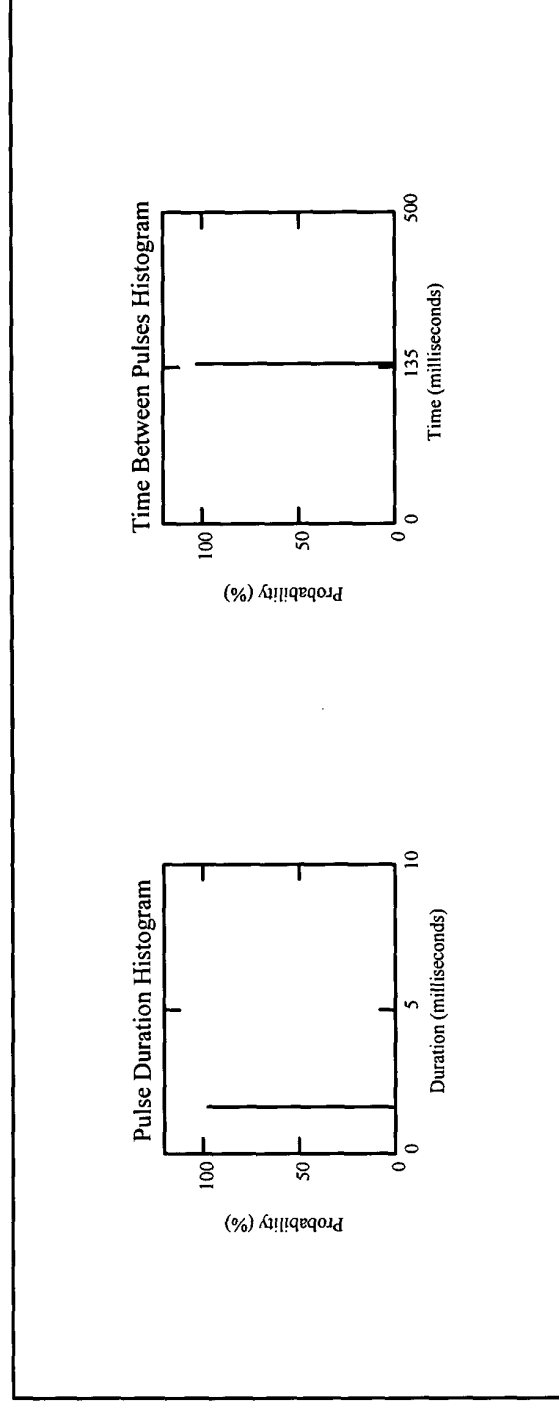


FIG. 25

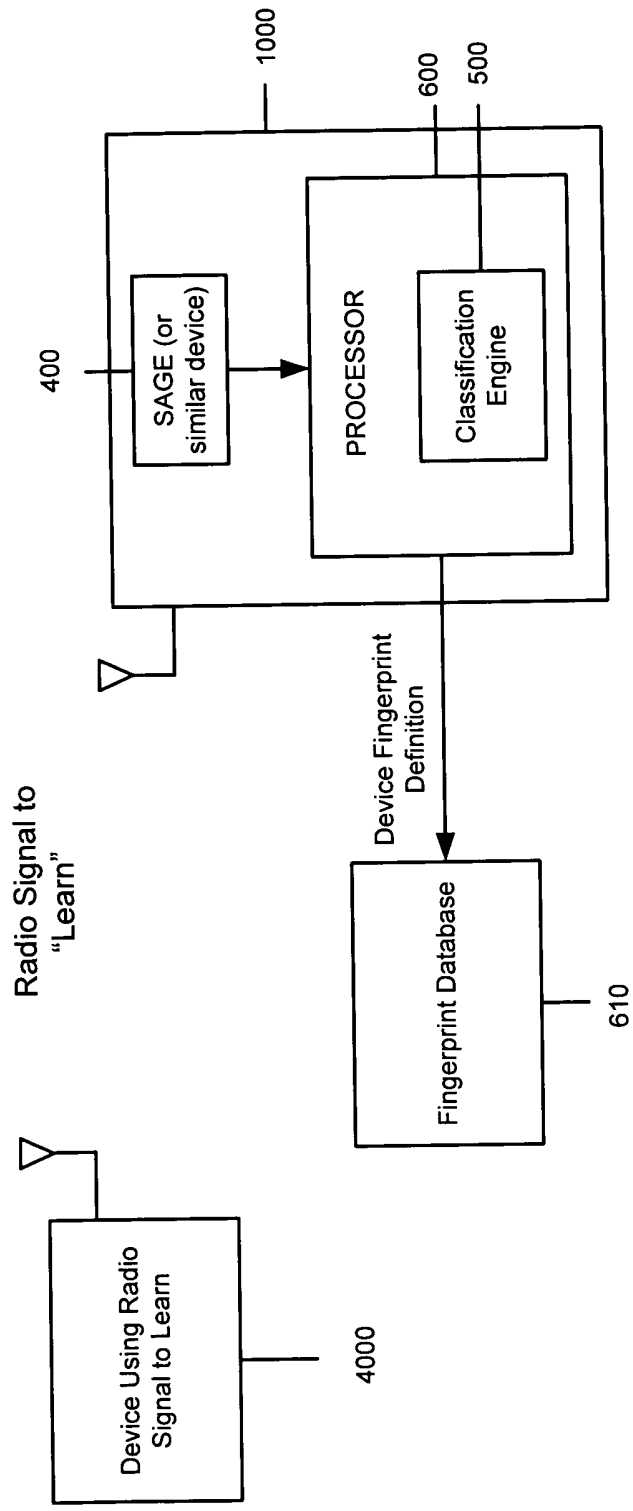


FIG. 26

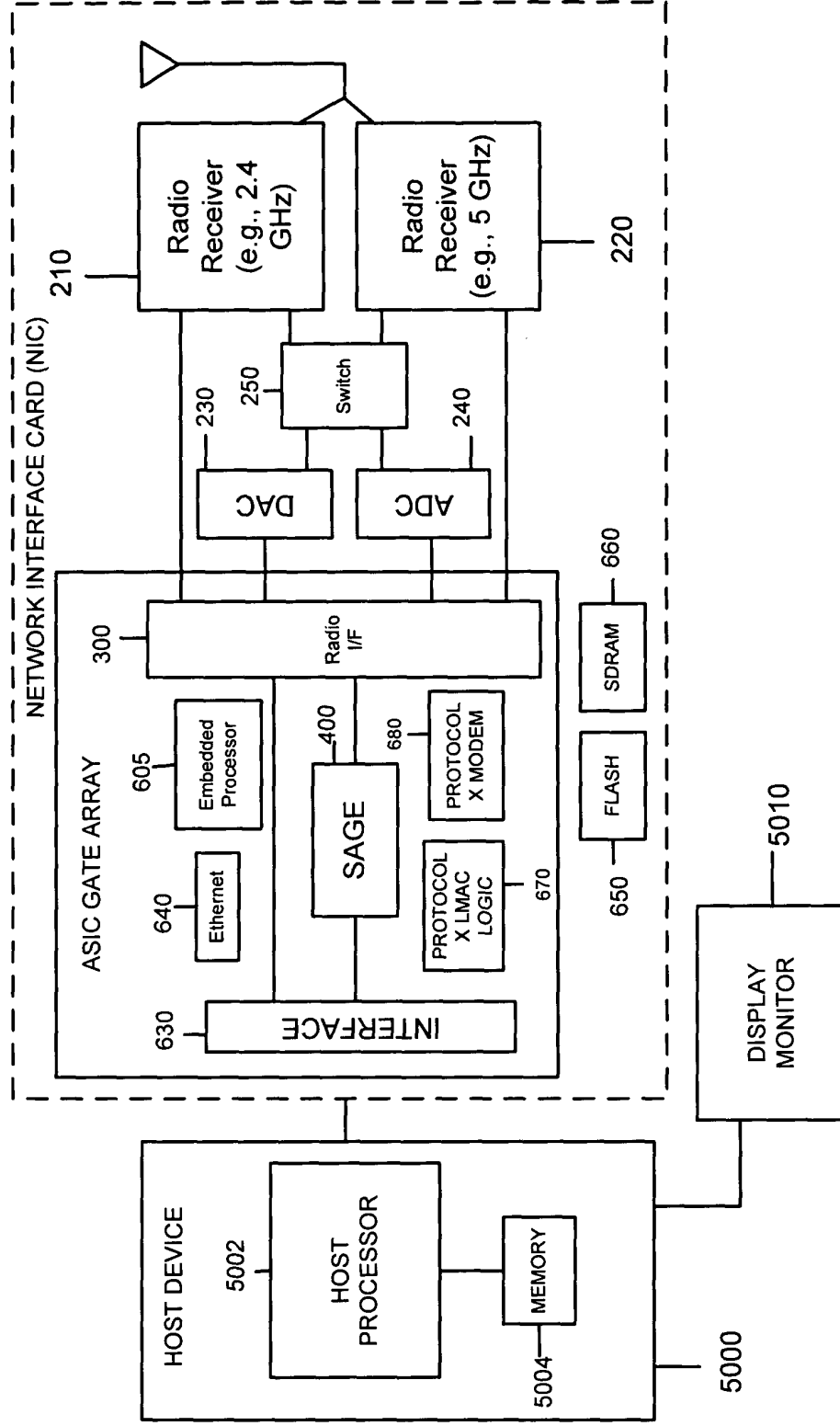




FIG. 27

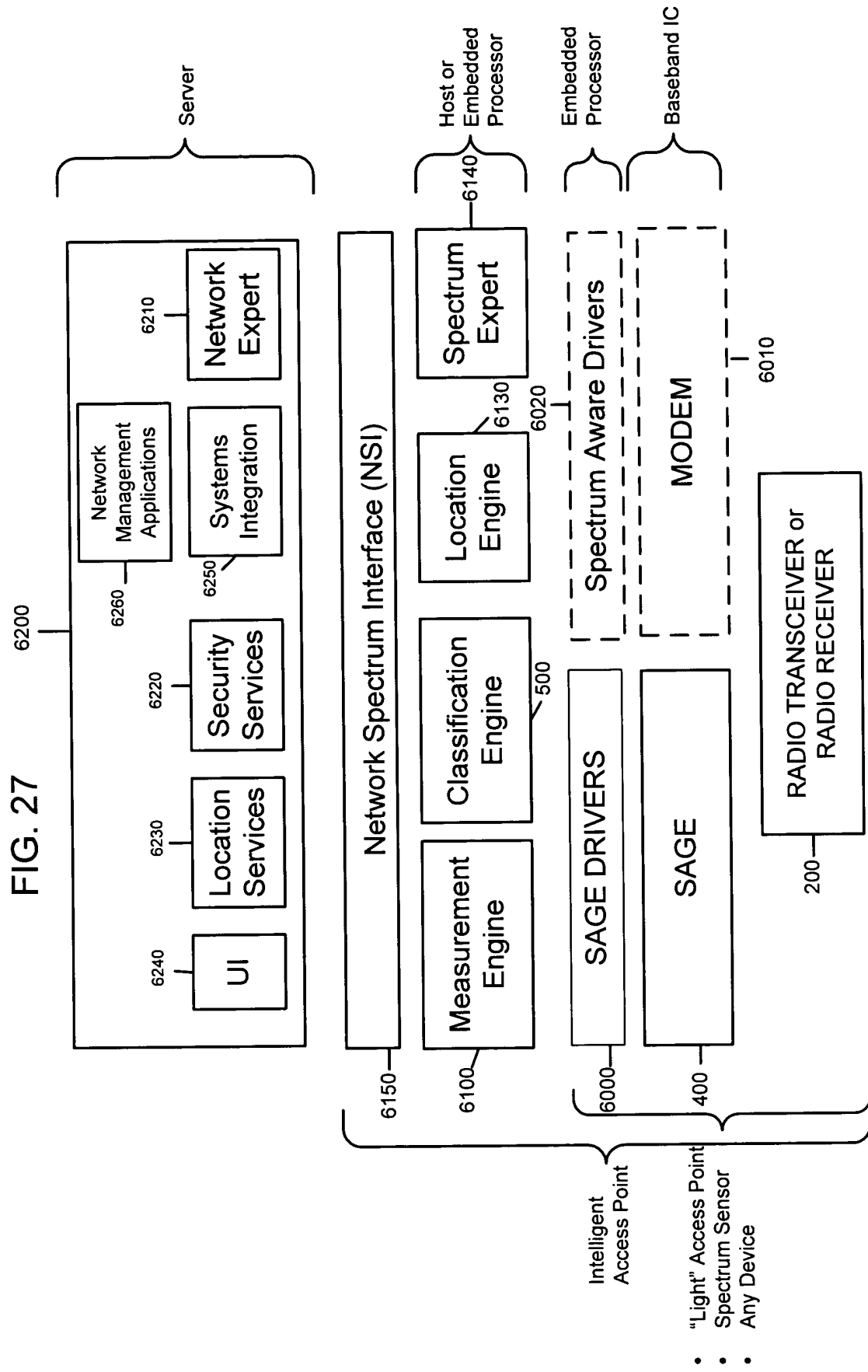


FIG. 28

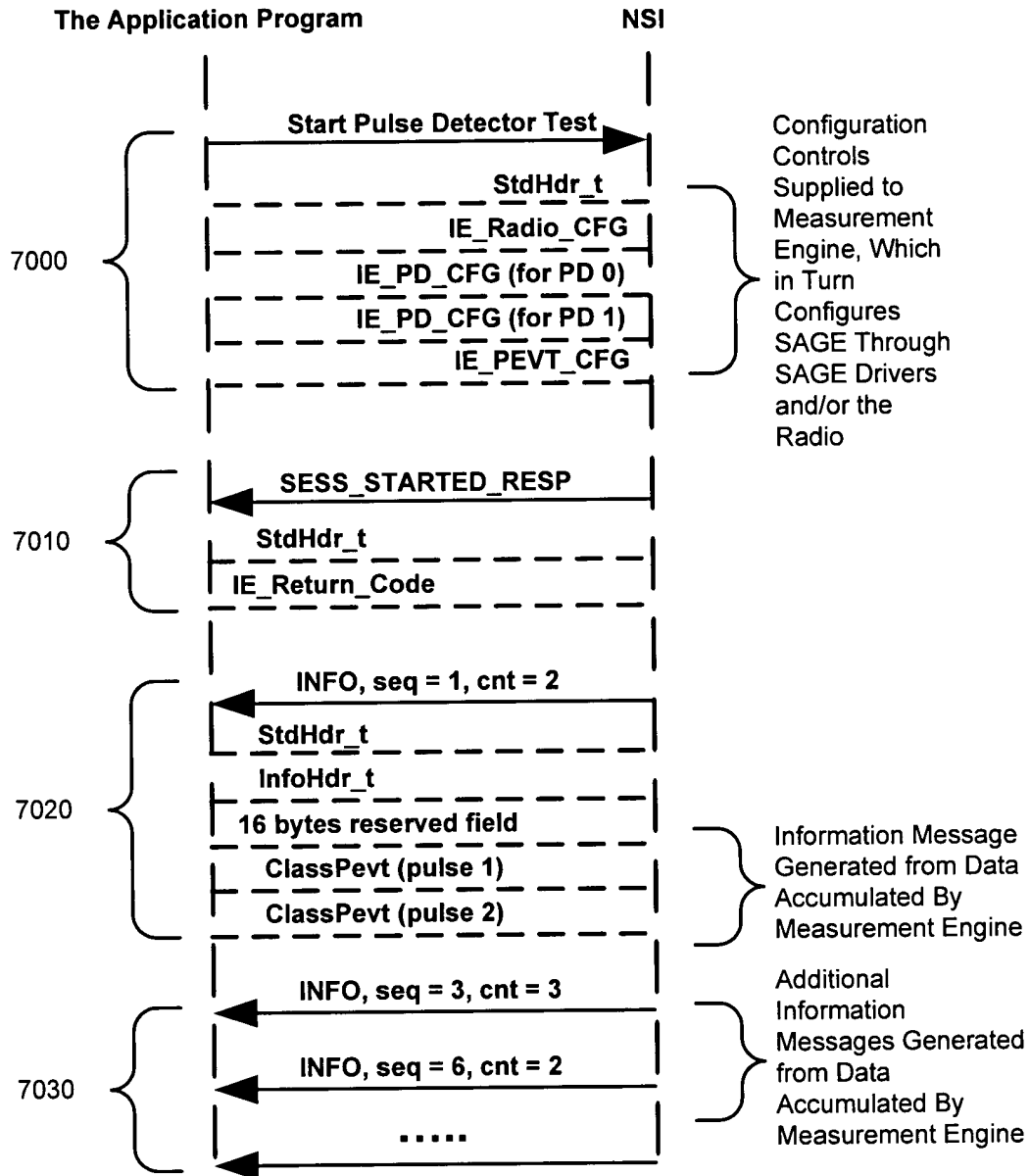


FIG. 29

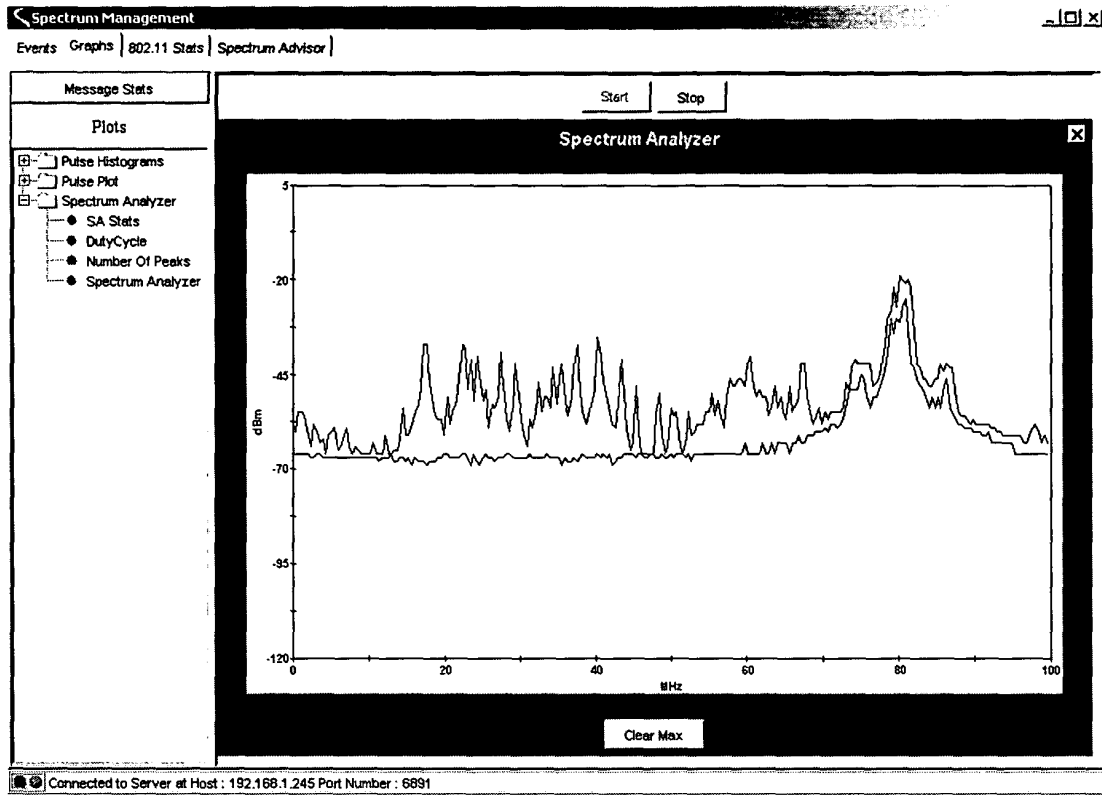


FIG. 30

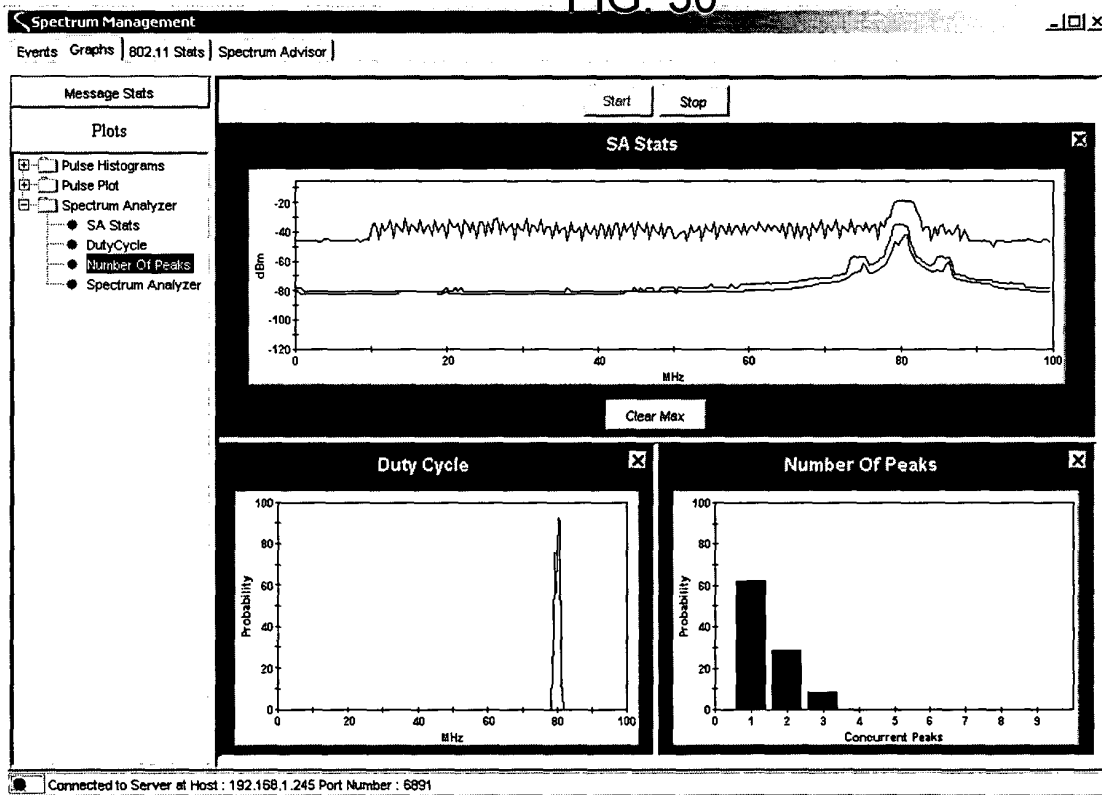


FIG. 31

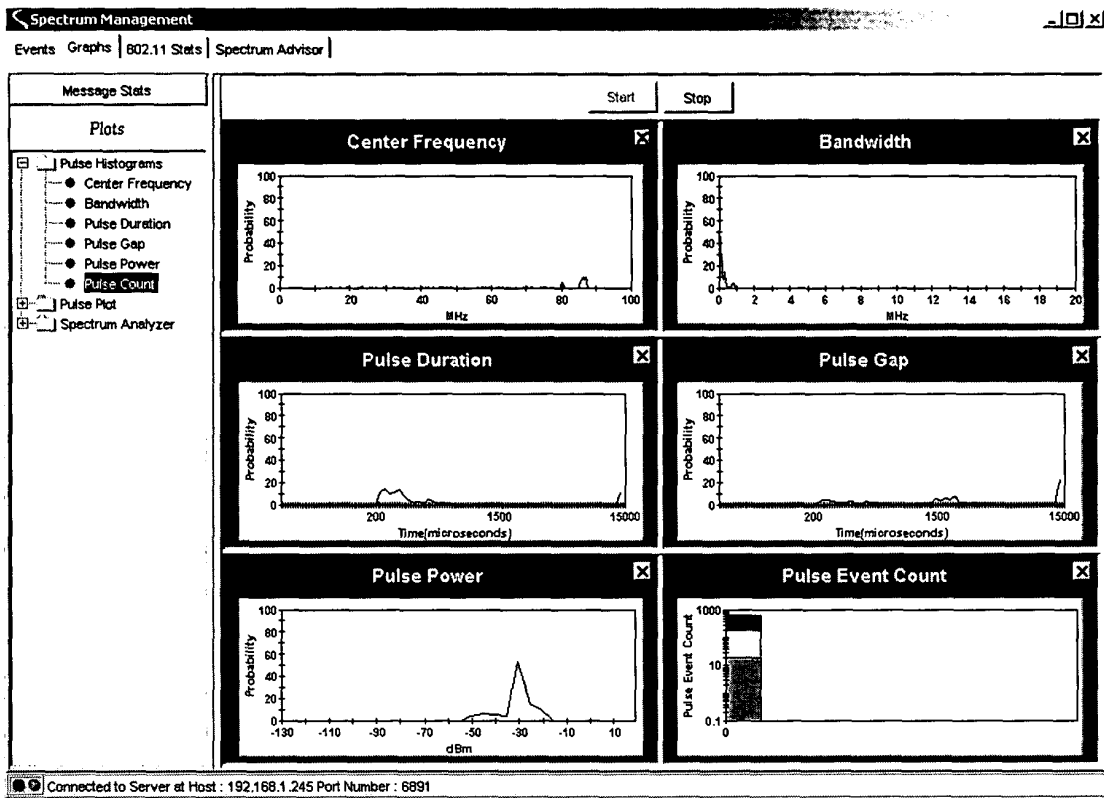


FIG. 32

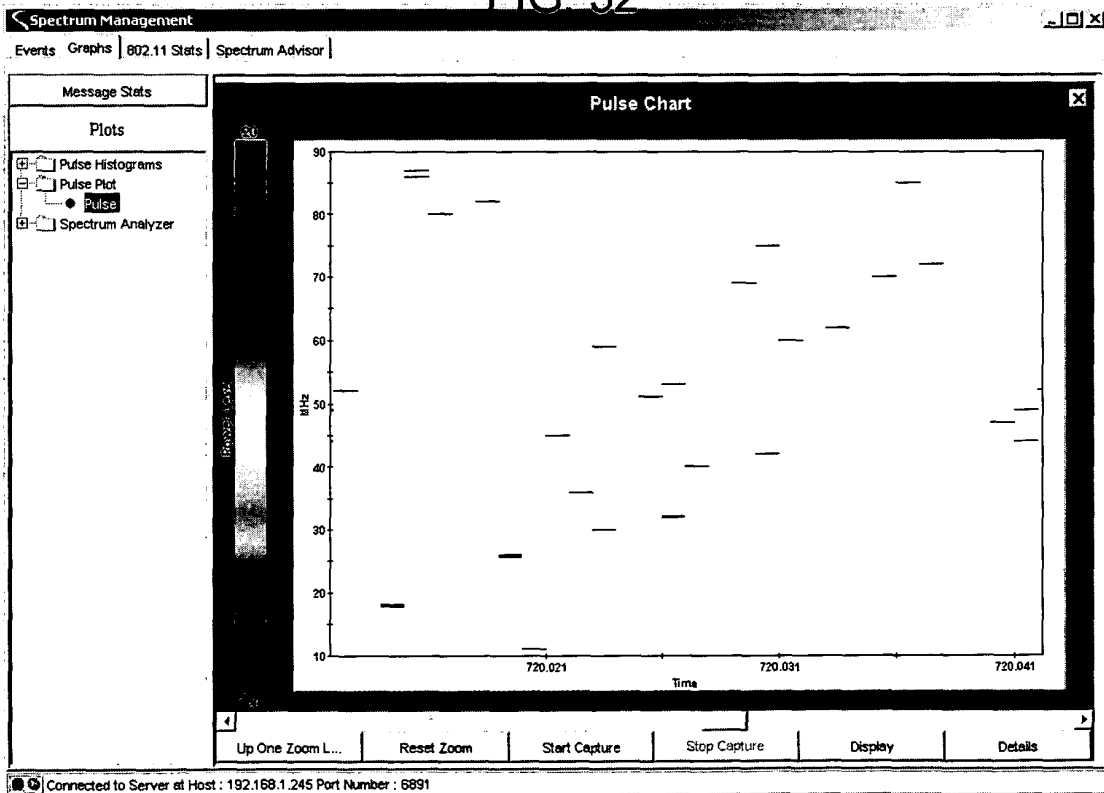


FIG. 33

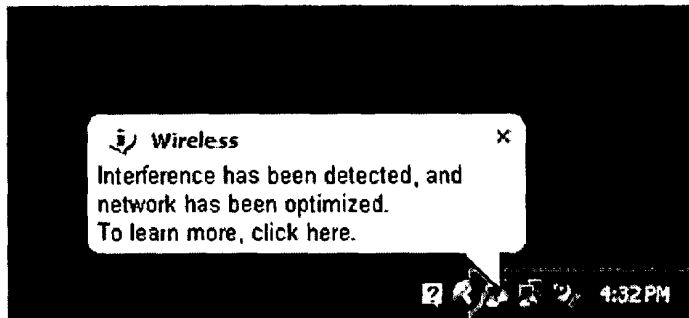


FIG. 34

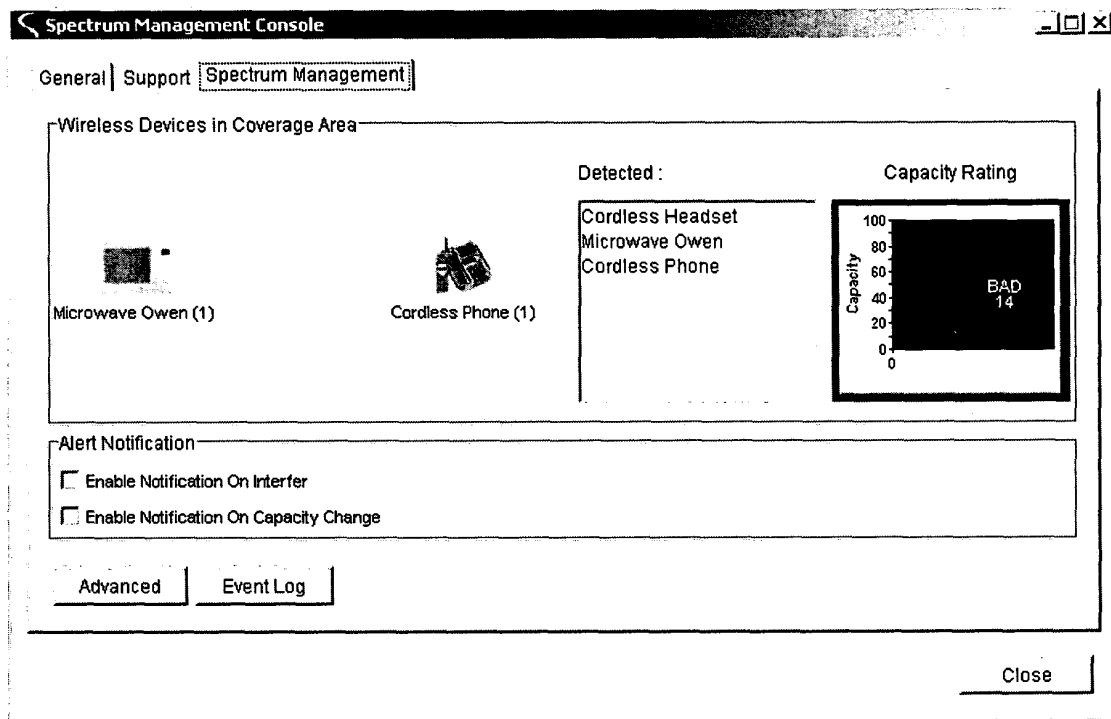


FIG. 35

Event Log							
Alert Level	Type	Message	Date & Time	Time Stamp		ID	Source ID
				sec	usec		
Low	Interferer	MICROWAVE OVEN Turned OFF	11:40:03 03/13/2003	5792	327712	2	0
High	Interferer	BULLET COTH HEADSET Turned ON	11:40:15 03/13/2003	5798	657712	7	0
Low	Interferer	GV CORDLESS PHONE Turned OFF	11:40:19 03/13/2003	5800	855424	4	0
Low	Interferer	MICROWAVE OVEN Turned ON	11:40:43 03/13/2003	5813	1133616	3	0
Low	Interferer	BULLET COTH HEADSET Turned OFF	11:40:48 03/13/2003	5815	921328	6	0
Low	Interferer	GV CORDLESS PHONE Turned ON	11:41:00 03/13/2003	5822	263816	5	0

Connected to Server at host: 127.0.0.1 Port Number: 5691

FIG. 36

Event Properties			
Event Properties			
Date & Time :	19:12:31 11/18/2002		
Event Time Stamp :	151195575	Event Source ID :	1
Event Type :	Interferer	Event ID :	9
Event Message :	Bluetooth detected		
Description			
<p>A bluetooth device has been detected.</p> <p>Power level = -24 dBm.</p> <p>Traffic type = SCO</p>			
Details			
<p>Automatic Spectrum Policy rule 7.0.2 has been triggered:</p> <p>802.11 Fragmentation size set to 512 bytes.</p> <p>802.11 Data rate has locked to 6 Mbps.</p>			
Close			

FIG. 37

Event Properties			
Event Properties			
Date & Time :	19:12:25 11/18/2002		
Event Time Stamp :	151193201	Event Source ID :	1
Event Type :	Interferer	Event ID :	7
Event Message :	Cordless Phone detected		
Description			
<p>A 2.4 Ghz cordless phone has been detected.</p> <p>Power level = -16 dBm.</p> <p>Traffic type = periodic, 1 ms bursts</p>			
Details			
<p>If you experience static on your cordless phone, then you can set a policy to prevent your 802.11 traffic from interfering with the phone. Go to the Policy Wizard Tab for more information.</p>			
Close			